

WE CLAIM:

1. A pharmaceutical composition comprising of (i) a therapeutically effective amount of a β -adrenergic agonist for the purpose of treating endometriosis or infertility, or for the purpose of improving fertility, and, (ii) a pharmaceutically acceptable bioadhesive carrier.

2. The composition of claim 1 wherein the β -adrenergic agonist is terbutaline.

3. The composition of claim 2 wherein the bioadhesive carrier is a cross-linked water insoluble but water swellable polycarboxylic acid polymer.

4. The composition of claim 3 wherein the concentration of terbutaline is from less than 0.1 % to about 0.4% weight/weight.

5. The composition of claim 4, wherein the polymer is polycarbophil.

6. A pharmaceutical composition comprising of a therapeutically effective amount of a β -adrenergic agonist for the purpose of treating endometriosis or infertility, or for the purpose of improving fertility, while avoiding detrimental blood levels of said β -adrenergic agonist.

7. The composition of claim 6 wherein the β -adrenergic agonist is terbutaline, and the composition is formulated to be administered in a dosage of about 0.5 to 2.5 g., which delivers from less than 1 mg. to about 8 mg. of terbutaline.

8. The composition of claim 7 wherein the composition further comprises a bioadhesive, water insoluble but water swellable, cross-linked polycarboxylic acid polymer.

9. The composition of claim 8, wherein the polymer is polycarbophil.

10. The composition of claim 9 wherein the composition is formulated to be administered in a dosage of about 1.0 to 1.5 g, which delivers from less than 2 mg to about 4 mg of terbutaline.

11. The composition of either of claims 5 or 9 wherein the agonist is used to treat endometriosis.

12. The composition of either of claims 5 or 9 wherein the agonist is used to treat infertility or to improve fertility.

13. A method of treating endometriosis or infertility, or of improving fertility, comprising administering a therapeutically effective amount of a composition comprising a β -adrenergic agonist and a pharmaceutically acceptable bioadhesive carrier locally to the vaginal mucosa of a patient in need thereof.

14. The method of claim 13, wherein the β -adrenergic agonist is terbutaline, and the composition is administered in a dosage of about 0.5 to 2.5 g, which delivers from less than 1 mg to about 8 mg of terbutaline.

15. The method of claim 14, wherein the composition is administered in a dosage of about 1.0 to 1.5 g, which delivers from less than 2 mg to about 4 mg of terbutaline.

16. A method of treating endometriosis or infertility, or of improving fertility, comprising administering a therapeutically effective amount of a composition comprising a β -adrenergic agonist and a pharmaceutically acceptable bioadhesive carrier locally to the vaginal mucosa of a patient in need thereof, while avoiding detrimental blood levels of said a β -adrenergic agonist.

17. The method of claim 16 wherein the β -adrenergic agonist is terbutaline.

18. The method of claim 17 wherein the bioadhesive carrier comprises a cross-linked water insoluble but water swellable polycarboxylic acid polymer.

19. The method of claim 18, wherein the polymer is polycarbophil.

20. The method of either of claims 15 or 19, wherein the composition is administered every 12 to 96 hours.

21. The method of either of claims 15 or 19, wherein the composition is administered twice weekly.

22. The method of either of claims 15 or 19, wherein the composition further comprises a tablet.

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23. Use of a β -adrenergic agonist and a pharmaceutically acceptable bioadhesive carrier in the manufacture of a medicament for administration to the vaginal mucosa in the therapeutic treatment of endometriosis.
 24. Use of a β -adrenergic agonist and a pharmaceutically acceptable bioadhesive carrier in the manufacture of a medicament for administration to the vaginal mucosa in the therapeutic treatment of infertility.
 25. Use of a β -adrenergic agonist and a pharmaceutically acceptable bioadhesive carrier in the manufacture of a medicament for administration to the vaginal mucosa in increasing fertility.
 26. Use according to any one of claim 23 to 25 wherein the β -adrenergic agonist is terbutaline.
 27. Use according to any one of claims 23 to 26 wherein the medicament is formulated to deliver from less than 1 mg to 8 mg of the β -adrenergic agonist per dose.
 28. Use according to any one of claims 23 to 27 wherein the bioadhesive carrier comprises a cross-linked water-insoluble but water-swellable polycarboxylic acid polymer.
 29. Use according to claim 26 wherein the concentration of terbutaline is from less than 0.1% to about 0.4% weight/weight.
 30. Use according to claim 26 wherein the polymer is polycarbophil.
 31. Use according to claim 29 wherein the medicament is formulated to be administered at a dosage of about 1.0 to 1.5g, which delivers from less than 2 mg to about 4 mg of terbutaline.

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- 32. Use according to claim 30 or 31 wherein the medicament is for administration every 12 to 96 hours.
 - 33. Use according to claim 30 or 31 wherein the medicament is for administration twice weekly.
 - 34. Use according to any one of claims 23 to 33 wherein the medicament avoids detrimental blood levels of the β -adrenergic agonist.
 - 35. Use according to any one of claims 23 to 34 wherein the medicament is presented in tablet form.